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10/091,855	03/06/2002	Patrick T. Prendergast	802_003	8597

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EXAMINER

KANTAMNENI, SHOBHA

ART UNIT

PAPER NUMBER

1617

DATE MAILED: 04/11/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/091,855	PRENDERGAST, PATRICK T.	
	Examiner	Art Unit	
	Shobha Kantamneni	1617	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 19 November 2004.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-139 is/are pending in the application.
- 4a) Of the above claim(s) 1-17 and 45-139 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 18-44 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 03/07/03:06/06/02.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Claims 1-139 are pending in this Application. Claims 1-17, and 45-139 are withdrawn from consideration pursuant to 37 CFR 1.142(b), as being drawn to nonelected inventions.

Applicant's election without traverse the species Circiliol which is 5,3',4'-trihydroxy-6,7 dimethoxy flavone as the compound and gemcitabine as chemotherapeutic agent , and also the election of pancreatic cancer, lung cancer as the type of neoplasia in the reply filed on November 19, 2004 is acknowledged. The species election requirement is made FINAL.

Claims 18-44 are examined herein as they read on the elected invention and species.

Claim Objections

Claim 36 is objected to because of the following informalities:

A comma is missing before poly(butyl methacrylate),

Appropriate correction is required.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 18-44 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Art Unit: 1617

(i) In claims 18-44 the recitation "derivatives of said compounds", "metabolites of said compounds", "analogues of said compounds", and "mimic molecules" is vague and indefinite, as it is unclear what other compounds these terms encompass.

(ii) Further, in claim 19 the recitation "precursor molecules of circiliol", "derivatives of circiliol", "metabolites of circiliol", "analogues of circiliol", and "mimic molecules" is vague and indefinite, as it is unclear what other compounds these terms encompass.

(iii) The phrase "substantially simultaneously" in claim 26 is vague. The term "substantially" is not defined by the claim, the specification does not provide a standard for ascertaining the term, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention.

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 18-44 are rejected under 35 U.S.C. 112, first paragraph, because the specification, while being enabling for the treatment of lung cancer and pancreatic cancer, **does not reasonably provide enablement for the treatment of neoplasia in general.** The specification does not enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to practice the invention commensurate in scope with these claims. The specification does not provide sufficient information that all cancers are

Art Unit: 1617

treatable by using various chemotherapeutic agents and with compounds described in the method claims 18, and 19.

The instant specification fails to provide information that would allow the skilled artisan to practice the instant invention without **undue experimentation**. Attention is directed to *In re Wands*, 8 USPQ2d 1400 (CAFC 1988) at 1404 where the court set forth the eight factors to consider when assessing if a disclosure would have required undue experimentation. Citing *Ex parte Forman*, 230 USPQ 546 (BdApl 1986) at 547 the court recited eight factors:

(1) the nature of the invention; (2) the state of the prior art; (3) the relative skill of those in the art; (4) the predictability or unpredictability of the art; (5) the breadth of the claims; (6) the amount of direction or guidance presented; (7) the presence or absence of working examples; and (8) the quantity of experimentation necessary.

(1). The Nature of the Invention:

All of the rejected claims are drawn to an invention which pertains to a method of treating a patient suffering from neoplasia by administering compounds such as circiliol and a chemotherapeutic agent. The nature of the invention is complex in that it encompasses the treatment of **all types of cancers** comprising administering circiliol with a wide array of variously chemotherapeutic agents.

(2). Breadth of the Claims:

The complex nature of the subject matter of this invention is greatly exacerbated by the breadth of the claims. The claims encompass treatment of **any number of cancers (neoplasia)** by administering circiliol with a wide array of variously chemotherapeutic agents. What's more, the scope of the compounds claimed to be useful for the treatment of neoplasia is extremely broad. There are countless possible chemotherapeutic agents for the treatment claimed.

(3). Guidance of the Specification:

The guidance given by the specification as to how one would administer the claimed compounds to a subject in order to inhibit any type of cancer cell is limited. All of the guidance provided by the specification is directed toward the treatment of specific cancers such as locally advanced or metastatic pancreatic cancer, larger cell lung cancer line LXFL 529L, and the lung adenocarcinoma cell line LXFA 526L by administering Gemcitabine and circiliol.

(4). Working Examples:

Applicant provides *in vitro* examples of the antitumor activity of gemcitabine and circiliol, alone and in combination in the large cell lung cancer line LXFL 529L and the lung adenocarcinoma cell line LXFA 526L in monolayer proliferation inhibition study.

(5). State of the Art:

While the state of the art is relatively high with regard to treating specific cancers, the state of the art with regard to treating **neoplasia**

Art Unit: 1617

generally is underdeveloped. In particular, there is no known anticancer agent which is effective against all cancers. Carter, et al. (Chemotherapy of Cancer, 2nd ed., 1981) clearly teaches that for the forty known anticancer agents, none are effective against all cancers (pages 362-365). There are compounds that treat a range of cancers, but no one has ever been able to figure out how to get a compound to be effective against cancer generally, or even a majority of cancers. Thus, the existence of such a "silver bullet" is contrary to our present understanding in oncology. This is true in part because cancers arise from a wide variety of sources, such as viruses (e.g. EBV, HHV-8, and HTLV-I), exposure to chemicals such as tobacco tars, genetic disorders, ionizing radiation, and a wide variety of failures of the body's cell growth regulatory mechanisms. Different types of cancers affect different organs and have different methods of growth and harm to the body, and different vulnerabilities. Even those that affect a single organ are often not generally treatable. For example, the main types of lung cancer are small cell (oat cell), giant cell, clear cell, adenocarcinoma of the lung, squamous cell cancer of the lung, and mesothelioma. There is no such thing as a treatment of these generally because of their diversity. Thus, it is beyond the skill of oncologists today to get an agent to be effective against cancers generally, evidence that the level of skill in this art is low relative to the difficulty of such a task.

(6). Predictability of the Art:

Art Unit: 1617

The invention is directed to treatment of neoplasia in general. It is well established that "the scope of enablement varies inversely with the degree of unpredictability of the factors involved," and physiological activity is generally considered to be an unpredictable factor. See *In re Fisher*, 427 F.2d 833, 839 (1970). Cancers are especially unpredictable due to their complex nature. Please refer to the discussion of Carter, et al. and the state of the art in (5) that shows the different treatments of cancers. The treatment of one type of cancer could not be necessarily the same for the other type.

(7). The Quantity of Experimentation Necessary:

In order to practice the claimed invention, one of skill in the art would have to first envision a combination of an appropriate pharmaceutical carrier, a dosage for each chemotherapeutic agent and ciciliol, the duration of treatment, route of treatment, etc. and, in the case of human treatment, an appropriate animal model system for one of the claimed compounds. One would then need to test the combination in the model system to determine whether or not the combination is effective for inhibiting cancer cells. If unsuccessful, which is likely given the lack of significant guidance from the specification or prior art regarding treatment of cancer with any compound, one of skill in the art would have to then either envision a modification of the first combination of pharmaceutical compound, compound dosage, duration of treatment, route of administration, etc.

Art Unit: 1617

and appropriate animal model system, or envision an entirely new combination of the above and test the system again. In order to practice Applicant's invention, it would be necessary for one to conduct the preceding experimentation for each type of cancer because, as described by Carter, et al., there is no known drug effective for inhibiting all types of cancer. Therefore, it would require **undue, unpredictable experimentation** to practice the claimed invention to inhibit cancer cells in a mammal by administration of one of the chemotherapeutic agents with circiliol within the claims.

Genetech, 108 F.3d at 1366 states that "a patent is not a hunting license. It is not a reward for search, but compensation for its successful conclusion" and "[p]atent protection is granted in return for an enabling disclosure of an invention, not for vague intimations of general ideas that may or may not be workable."

Therefore, a method for treating a patient suffering from **neoplasia in general** by administering the various chemotherapeutic agents with compounds such as circiliol of the claims is not considered to be enabled by the instant specification.

Claims 18-21, 23-44 are rejected under 35 U.S.C. 112, first paragraph, because the specification, while being enabling for chemotherapeutic agent such as antimetabolite gemcitabine, **does not reasonably provide enablement for the chemotherapeutic agents in general**. The specification does not enable

Art Unit: 1617

any person skilled in the art to which it pertains, or with which it is most nearly connected, to practice the invention **commensurate in scope** with these claims.

The instant specification fails to provide information that would allow the skilled artisan to practice the instant invention without **undue experimentation**.

Attention is directed to *In re Wands*, 8 USPQ2d 1400 (CAFC 1988) at 1404 where the court set forth the eight factors to consider when assessing if a disclosure would have required undue experimentation. Citing *Ex parte Forman*, 230 USPQ 546 (BdApls 1986) at 547 the court recited eight factors:

(1) the nature of the invention; (2) the state of the prior art; (3) the relative skill of those in the art; (4) the predictability or unpredictability of the art; (5) the breadth of the claims; (6) the amount of direction or guidance presented; (7) the presence or absence of working examples; and (8) the quantity of experimentation necessary.

(1). The Nature of the Invention:

All of the rejected claims are drawn to an invention which pertains to a method of treating a patient suffering from neoplasia by administering compounds such as circiliol and a chemotherapeutic agent. The nature of the invention is complex in that it encompasses the treatment of cancer comprising administering circiliol with a wide array of variously chemotherapeutic agents.

(2). Breadth of the Claims:

The complex nature of the subject matter of this invention is greatly exacerbated by the breadth of the claims. The claims

Art Unit: 1617

encompass treatment of neoplasia by administering circiliol with **any** chemotherapeutic agent.

(3). Guidance of the Specification / (4) Working Examples:

The guidance given by the specification as to what type of formulations comprising a circiliol and a chemotherapeutic agent would be effective for the treatment of cancer is limited. Applicant shows the combination treatment of circiliol with a chemotherapeutic agent gemcitabine on pages 32, and 33 of the specification.

(5). State of the Art:

While the state of the art is relatively high with regard to specific chemotherapeutic agent, and flavonoids the state of the art with regard to chemotherapeutic agents in **general** is underdeveloped. Different chemotherapeutic agents have different chemical structures and are expected to behave in different manners. The level of skill in this art is low relative to the difficulty of the task of determining a circiliol combination with a suitable chemotherapeutic agent. For example, it is known in the art quercetin a flavonoid structurally closely related to circiliol acts synergistically with chemotherapeutic agents like tamoxifen, cisplatin, adriamycin in human breast-cancer cell lines. However when quercetin was used in combination with chemotherapeutic agent etoposide, no enhancement of the anti-tumor activity of chemotherapeutic agent etoposide was seen. Sarkar (Cancer Chemother. Pharmacol 1995, 36, page 448) teaches that the

Art Unit: 1617

therapeutic application of a flavonoid, in combination with chemotherapeutic agents, should be considered with caution. Wang (Expert Opinion on Investigational Drugs 2000, 9(9), 2103-2118) reports that combined administration of a flavonoid flavopiridol with antineoplastic agents is highly sequence-dependent. He further reports that cytotoxicity synergy resulted when flavopiridol was combined with seven of the eight tested antineoplastic agents, but was highly dependent upon the administration schedule. Cisplatin was the only agent that resulted in sequence-independent synergy when combined with flavopiridol.

(6). Predictability of the Art:

The invention is directed to **chemotherapeutic agents in general**. It is well established that "the scope of enablement varies inversely with the degree of unpredictability of the factors involved," and physiological activity is generally considered to be an unpredictable factor. See *In re Fisher*, 427 F.2d 833, 839 (1970). Chemotherapeutic agents are especially unpredictable due to their complex nature.

It is further noted that the pharmaceutical art is **unpredictable**, requiring each embodiment to be individually assessed for physiological activity. In the instant case, the claimed invention is highly **unpredictable**. For example chemotherapeutic agents such as 5-Fluorouracil, Gemcitabine, etoposide, doxorubicin, Cisplatin etc.

Art Unit: 1617

have very different structures and thus will possess different properties such as binding affinities, solubilities etc. Thus one skilled in the art would recognize that the combination of these chemotherapeutic agents with Circiliol is highly unpredictable with regards to therapeutic effects, side effects, and especially serious toxicity that may be generated by drug-drug interactions. Further the cytotoxic synergy of combined administration of the flavonoid and chemotherapeutic agent depends on the administration schedule as discussed in the state of the art (5). Please refer to the discussion of quercetin a flavonoid, which is structurally closely related to circiliol and the state of the art in (5) that shows different behaviour with different chemotherapeutic agents. One of skill in the art would not be able to fully predict the possible treatments herein and possible adverse effects occurring with many agents having the claimed functional properties and their combinations to be administered to a host in the claimed method herein. Thus, the instant claimed invention is highly unpredictable.

(7). The Quantity of Experimentation Necessary:

In order to practice the claimed invention, one of skill in the art would have to first envision a combination of specific chemotherapeutic agent with circiliol, pharmaceutical carrier, a dosage for each chemotherapeutic agent, the duration of treatment, route of treatment, etc. One would then need to test the combination in the model system to determine whether or not the combination is effective for inhibiting

Art Unit: 1617

cancer cells and one would need to test for side effects and toxicity. If the treatment is unsuccessful, one of skill in the art would have to modify the first combination with another chemotherapeutic agent, dosage, duration of treatment, route of administration, sequence of administration etc. Even if successful, however, one of skill in the art would then need to determine the magnitude of the side effects and toxicity of utilizing circiliol in combination with the chemotherapeutic agent. One would then need to determine whether or not the magnitude of the side effects could be reduced by increasing or decreasing the dosage of one or both of the agents while retaining the functional aspect of the combination. Once the functionality to toxicity ratio was maximized, one would need to determine whether or not the combination which had been used was of sufficient benefit that it would serve as a useful conditioning combination. If not, one would need to select another chemotherapeutic agent and repeat the process until a sufficient benefit to detriment ratio had been achieved.

Genetech, 108 F.3d at 1366 states that "a patent is not a hunting license. It is not a reward for search, but compensation for its successful conclusion" and "[p]atent protection is granted in return for an enabling disclosure of an invention, not for vague intimations of general ideas that may or may not be workable."

Claim Rejections - 35 USC § 103

Art Unit: 1617

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The instant invention is drawn to a method of treating a patient suffering from cancers such as pancreatic cancer and lung cancer, comprising administering a chemotherapeutic agent and a compound circiliol.

Claims 18-27, 30-33, 37-44 are rejected under 35 U.S.C. 103(a) as being unpatentable over Francis et al. (WO 00/03706) in view of Chinery et al. (WO / 9901118), and further in view of Tsukada et al. (Biochemical and Biophysical Research Communications, Vol. 140, No.3, 1986, pages 832-836).

Francis et al. (WO 00/03706) teach a therapeutic composition comprising a therapeutically efficient amount of a flavonoid type compound of formula (I) in the treatment of tumors with cytotoxic agents. In formula (I), when R₁, R₅ are H, R₄ is OH, and R₆ is phenyl group substituted with 2 OH groups results in circiliol of the instant invention. See page 2, lines 23-30. The chemotherapeutic agents such as gemcitabine, nucleotide analogues such as 5-fluoro Uracil are disclosed. See page 6, line 12. It is also taught that the flavonoids can be combined with the major cytotoxic agents used in polychemotherapies for solid tumors. Examples of methods of use of the compounds flavonoids with chemotherapeutic agent gemcitabine for the treatment of bronchial cancer, is also taught. In the chemotherapeutic treatment of cancers with cytotoxic agents, flavonoids can be

Art Unit: 1617

administered at the start of chemotherapeutic treatments, either in a single dosage intake or over several days at the start of these treatments depending on the chemotherapeutic protocol. The flavonoid compounds of formula (I) are administered at doses 5 to 50 mg/kg/day. The flavonoid compound and cytotoxic agent can be administered orally, intravenously etc. See page 4, lines 1-10, lines 20-25; lines 30-33, page 6; pages 16, 17. Francis et al. further teach that the flavonoids can be combined with gemcitabine in a treatment regimen for the treatment of pancreatic cancer. See page 39, lines 10-15; page 81, claims 2, 5, and 10. The treatment of Neoplasia in the form of solid tumors such as non-small-cell lung cancers is also taught. See page 14, lines 15-18.

Francis et al. does not explicitly teach the use of flavone such as Circiliol with chemotherapeutic agent for the treatment of Pancreatic cancer, and lung cancer.

Francis et al. do not teach a method of treating pancreatic cancer wherein the compound and/or chemotherapeutic agent are contained in a liposome, and said liposome vehicle can be targeted to tumors.

Chinery et al. (WO/9901118) disclose a method to enhance the cytotoxic activity of an antineoplastic drug comprising administering an effective amount of a antineoplastic drug to a host in combination with an effective amount of an antioxidant. See page 6, lines 4 to 15. The antioxidants increase the effectiveness and decrease the toxicity of antineoplastic agents. The antineoplastic agents include Fluorouracil, Gencitabine, Tamoxifine etc. See page 45, lines 15-20. The antioxidants disclosed include flavonoids, phenolic

Art Unit: 1617

compounds, and inhibitors of lipoxygenases. See page 43, lines 7-10. Chinery et al. further teaches that conditions such as bone cancer, breast cancer, gastric cancer, pancreatic cancer can be treated using said combination. See page 47, line 5-page 48, line 2.

Chinery et al. also teaches that pharmaceutical compositions wherein the active compounds can be in a controlled release formulation, including implants and microencapsulated delivery systems. Biodegradable, biocompatible polymers such as ethylene vinyl acetate, polyanhydrides, polyglycolic acid, collagen, polylactic acid can be used. See page 51, lines 18-21. Liposomal suspensions containing the actives, including liposomes targeted to infected cells with monoclonal antibodies to viral antigens are also disclosed.

Tsukada et al. (Biochemical and Biophysical Research Communications, Vol. 140, No.3, 1986, pages 832-836) teach that flavonoid compounds like Circiliol is a potent specific inhibitor for arachidonate 5-lipoxygenase and suppressed the growth of leukemia cells in human See abstract; page 834, Fig. 1.

It would have been obvious to a person of ordinary skill in the art at the time of invention to use Circiliol as flavone and combine with gemcitabine as taught by Francis for the treatment of pancreatic cancer. One would be motivated to combine Circiliol a potent inhibitor of arachidonate 5-lipoxygenase as taught by Tsukada with Gemcitabine because (i) Chinery teaches that antineoplastic drugs can be combined with lipoxygenase inhibitor in the treatment of pancreatic cancer (ii) Circiliol is a lipoxygenase inhibitor. One would be motivated to use a

Art Unit: 1617

combination of Circiliol and Gemcitabine for the treatment of pancreatic cancer with the expectation of increasing the effectiveness and decreasing the toxicity of chemotherapeutic agent.

It would have been obvious to a person of ordinary skill in the art at the time of invention to use Cirsiolol as flavone and combine with gemcitabine as taught by Francis for the treatment of lung cancer. One would be motivated to combine Cirsiolol a potent inhibitor of arachidonate 5-lipoxygenase as taught by Tsukada with Gemcitabine because (i) Chinery teaches that antineoplastic drugs can be combined with lipoxygenase inhibitor in the treatment of cancer (ii) Cirsiolol is a lipoxygenase inhibitor. One would be motivated to use a combination of Cirsiolol and Gemcitabine with the expectation of treating lung cancer, with increased effectiveness and decreased toxicity of chemotherapeutic agent.

It would have been obvious to a person of ordinary skill in the art at the time of invention to use liposomal suspensions containing Circiliol or chemotherapeutic agent because Chinery teaches liposomal suspension can be used as pharmaceutical carriers for Gemcitabine and flavonoids. The motivation to use liposomal vehicle containing the chemotherapeutic agent or circiliol is with the expectation of delivering the actives more effectively to the infected cells.

Claim 28 is rejected under 35 U.S.C. 103(a), as being unpatentable over Francis et al. in view of Chinery et al. (WO / 9901118), and in view of Tsukada et al. (Biochemical and Biophysical Research Communications, Vol. 140, No.3, 1986, pages 832-836), as applied to Claims 18-27, 30-33, 37-44 above, and further in view of Wang et al. (US 6,608,026).

Art Unit: 1617

Francis et al., Chinery, and Tsukada are applied as discussed above.

The references do not teach the administration of radiation treatment.

Wang et al. teach a combination therapy in the treatment of pancreatic cancer by administering a therapeutically effective amount of peptoid, and the antineoplastic agent such as gemcitabine. See column 12, lines 62-66. Wang further teaches that the peptoid, chemotherapeutic agent and/or radiation may be administered concurrently, sequentially, in any order, depending on the nature of the disease, the condition of the patient, and the actual choice of chemotherapeutic agent and/or radiation. See column 11, line 61-column 12, line 8.

It would have been obvious to a person of ordinary skill in the art at the time of invention to administer radiation treatment to a patient undergoing chemotherapy because Wang teaches that chemotherapeutic agent and radiation may be administered concurrently, sequentially in any order. One would be motivated to administer radiation treatment with the expectation of obtaining a beneficial effect of treating cancer more effectively.

Claims 29, and 34-36 are rejected under 35 U.S.C. 103(a), as being unpatentable over Francis et al. in view of Chinery et al. (WO / 9901118), and in view of Tsukada et al. (Biochemical and Biophysical Research Communications, Vol. 140, No.3, 1986, pages 832-836), as applied to Claims 18-27, 30-33, 37-44 above, and further in view of Borisy (US 6,569,853).

Francis et al., Chinery, and Tsukada are applied as discussed above.

The references do not specifically teach that the compounds and/or chemotherapeutic agents are contained in a pharmaceutical formulation which has an enteric coating made of polymers such as poly(lactic-glycolic acid) polyester, cellulose acetate phthalate etc. The references do not teach performing surgery on the patient.

Borisy et al. teach a method of treating a patient having cancer comprising administering chlorpromazine and pentamidine. See column 23 , lines 30-35. The treatment can be performed alone or in conjunction with another therapy such as surgery, radiation, chemotherapy. See column 13, lines 55-65. Borisy further teaches that the formulations for oral use include tablets, which may be coated to release the active drug in a predetermined pattern or it may be adapted not to release the active drug substance until after passage of the stomach (enteric coating). The polymers such as methacrylic acid copolymer, cellulose acetate phthalate, hydroxypropyl methylcellulose phthalate etc. are disclosed for enteric coating. See column 15, lines 33-50.

It would have been obvious to a person of ordinary skill in the art at the time of invention to perform surgery on a patient undergoing chemotherapy because Borisy teaches that chemotherapeutic agent and surgery may be administered in conjunction. One would be motivated to perform surgery with the expectation of obtaining a beneficial effect of treating cancer more effectively.

It would have been obvious to a person of ordinary skill in the art at the time of invention to contain the chemotherapeutic agent in pharmaceutical formulation which has an enteric coating using polymers such as cellulose

Art Unit: 1617

acetate because Borisy teaches that the active agents for the treatment of cancer can be contained in a formulation which has enteric coating. One would be motivated to use enteric coating for containing the active agent with the expectation of delaying the disintegration and absorption of the active agent in the gastrointestinal tract and thereby providing a sustained release of the active.

Conclusion

No claims are allowed.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Shobha Kantamneni whose telephone number is 571-272-2930. The examiner can normally be reached on Monday-Friday, 8am-5pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Sreeni Padmanabhan can be reached on 571-272-0629. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



SREENI PADMANABHAN
SUPERVISORY PATENT EXAMINER